

REMARKS

Claims 2-15 and 17-20 are pending in this application. Claims 3, 14 and 19 are independent. Reconsideration and allowance of this application are respectfully requested.

OBJECTION TO THE DRAWINGS

The Examiner has objected to the drawings under 37 C.F.R. § 1.83(a) as the drawings must show every feature of the invention specified in the claims. Specifically, the Examiner stated that the feature of “the heat slug comprises a solder bonding layer formed on the surface of a heat slug that contacts the solder film” (claim 8) must be shown for the features canceled from the claims.

Applicants submit that the drawings do **not** require any changes as Fig. 1 discloses the features recited in claim 8. Namely, reference character “42” is an “adhesion layer” that may be formed on one side 41 of the heat slug 40.

Moreover, the Examiner believes that a replacement drawing sheet has been submitted along with the previously filed Amendment¹; however, Applicants submit that there was no drawing replacement sheet. Rather Applicants have amended the specification to reflect the above assertion. Applicants request further clarification if the Examiner continues to maintain his rejection.

Accordingly, reconsideration and withdrawal of the objection are respectfully requested.

CLAIM REJECTIONS - 35 U.S.C. § 103

Claims 3, 5, 6, 14 and 15 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Ozawa et al. (“Ozawa”), US Patent 5,592,735 in view of Akasaki et al. (“Akasaki”), US Patent 5,217,922. This rejection is respectfully traversed.

The Examiner admitted that Ozawa does not disclose “a multi-metal layer in contact with and between the semiconductor chip and the solder film”.² However, the Examiner attempts to overcome the admitted deficiency of Ozawa by arguing that Akasaki teaches the above features. Applicants respectfully disagree.

Specifically, Applicants submit that Ozawa and Akasaki are **not** combinable, and the Examiner has failed to provide a proper evidence of a suggestion or motivation for the combination. Applicants further submit that the reasoning behind the Examiner’s motivation for

¹ See Office Action, page 3, paragraph 4.

² See Office Action, page 4, paragraph 7.

combining Ozawa and Akasaki is *impermissible hindsight* reconstruction to reject the claims, which is also not acceptable.

The Examiner alleged:

[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ozawa et al. by using the multi-metal layer film as taught by Akasaki et al. The ordinary artisan would have been motivated to modify Ozawa et al. in the manner described above for at least the purpose of increasing adhesion to the back of a silicone substrate without thermal damage to a BLM layer or a semiconductor element³

However, it is submitted that the Examiner has failed to provide any evidence or motivation as to why the multi-metal layer film of Akasaki would be used in the multi-chip module of Ozawa, or more specifically, evidence as to why one of ordinary skill in the art would be motivated to combine the teachings of Akasaki with the teachings of Ozawa when the combination of references would at least substantially destroy the prior art and substantially change the principle of operation of the prior art. For example, incorporating the thermal conductive blocks 33-1, 33-2 of Ozawa with the metallized layer 9A of Akasaki would contradict the operation of Akasaki because one of the objectives in Akasaki is to improve the close adhesion between the back surface 13 of the semiconductor chip and the cap 3 (col. 7, lines 21-23). It is submitted that by placing the thermal conductive blocks of Ozawa with the metallized layer in Akasaki would enhance the thickness of the device.

Accordingly, the combination must be supplemented by some other teaching wherein one of ordinary skill in the art must be motivated to provide the supplemental teaching by some motivation, teaching or suggestion of the desirability to make the combination as indicated in In re Dembizek, 50 USPQ2d 1646 (Fed. Cir. 1999) and In re Kotzab, 55 USPQ 1313 (Fed. Cir. 2000).

Further, the Examiner is using *impermissible hindsight* reconstruction to reject the features recited in claim 1. That is, the Examiner's alleged statement noted above, concludes that the metallized layer of Akasaki could be used in Ozawa, and thus sufficient evidence that Ozawa and Akasaki are combinable. Applicant disagrees with the Examiner's reasoning, and submits that the mere possibility that one element in a reference could be used in another is not sufficient evidence of a suggestion or motivation to combine the two references. In fact, the Examiner's broad conclusory statement (e.g., "increasing adhesion to the back of a silicone

³ See Office Action paragraph bridging pages 4 and 5.

substrate without thermal damage”) is wholly misplaced. That is, placing the thermal conductive blocks in Akasaki would not improve the close adhesion properties.

Applicants submit that the Examiner has used the present application as a blueprint, selected a prior art in Ozawa as the main structural device, and then searched other prior art for the missing feature (e.g., multi-metal layer film), without identifying or discussing any specific evidence or motivation to combine, other than providing broad conclusory statements regarding the knowledge in the art, motivation and obviousness. The Examiner’s motivation to combine is not proper. The Federal Circuit has noted that the PTO and the courts cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention” In re Fine, 5 USPQ2d 1780 (Fed. Cir. 1988), and that the best defense against hindsight base obviousness is the rigorous application of the requirement for showing of a teaching or a motivation to combine the prior art references. Applicants submit that the Examiner has failed to provide any evidence of motivation for combining the teachings of Ozawa and Akasaki.

Accordingly, for at least these reasons, claim 1 and those claims dependent thereon are allowable over the prior art. Withdrawal of this rejection is respectfully requested.

For the similar reasons discussed above, independent claims 14 and 19 are also allowable. Claims 15-18 and 20 are allowable by virtue of their dependency on either independent claims 14 or 19. Withdrawal of the rejection is respectfully requested.

CLAIM REJECTIONS - 35 U.S.C. § 103

Claims 2 and 13 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Ozawa and Akasaki in view of Haley, US Patent 5,359,768; claim 4 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Ozawa and Akasaki in view of Furukawa et al. (“Furukawa”), US Patent 5,683,937; claim 7 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Ozawa and Akasaki in view of Takahama et al. (“Takahama”), US Patent 5,336,364; claims 8 and 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Ozawa and Akasaki in view Myers et al. (“Myers”), US Patent 5,395,679; claim 10 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Ozawa and Akasaki in view Jeong et al. (“Jeong”), US Patent 6,060,778; claims 11 and 12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Ozawa and Akasaki in view of Hawthorne et al. (“Hawthorne”), US Patent 5,410,451; claims 17 and 19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hawthorne in view of Ozawa and Akasaki; claim 18 is rejected under 35

U.S.C. § 103(a) as being unpatentable over Hawthorne, Ozawa and Akasaki in view Takahama et al.; and claim 20 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Hawthorne in view of Ozawa and Akasaki, and further in view of Jeong. These rejections are respectfully traversed.

As discussed above, Ozawa fails to disclose or suggest the claimed invention as found in claims 3, 14 and 19, the independent claims from which the rejected claims depend. Further, Haley, Furukawa, Takahama, Myers, Jeong and Hawthorne, individually or in any combination, fail to overcome the noted deficiencies of Ozawa. Withdrawal of the rejection is respectfully requested.

CONCLUSION

In view of the above, Applicants earnestly solicit reconsideration and allowance of all of the pending claims.

Should there be any matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,
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